UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/622,745	08/22/2000	Anders Edlund	1103326-0633	2661

7590 05/20/2003

White & Case
1155 Avenue of the Americas
New York, NY 10036-2787

EXAMINER
LANDSMAN, ROBERT S

ART UNIT	PAPER NUMBER
1647	15

DATE MAILED: 05/20/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/622,745	EDLUND ET AL.	
	Examiner	Art Unit	
	Robert Landsman	1647	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 February 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21 and 32-47* is/are pending in the application.

4a) Of the above claim(s) *1-21* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *32-47* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

The Office Action dated 8/13/02, was made FINAL. However, upon further consideration, new issues have been raised. Therefore, the finality of that action is withdrawn and prosecution on the merits continues.

1. Formal Matters

A. Amendment C, filed 2/20/03, has been entered into the record.

B. Amendment D, filed 5/14/03, has been entered into the record.

C. Claims 1-41 were pending in this Office Action. Claims 1-21 and 28-31 are drawn to a non-elected invention. In Amendment C, Applicants canceled claims 22-27 and added new claims 42-47. Therefore, claims 1-21 and 32-47 are pending and claims 32-47 are the subject of this Office Action.

D. All Statutes under 35 USC not found in this Office Action can be found, cited in full, in a previous Office Action.

2. Objection to the Specification

A. The objection to the specification regarding the omission of drawings has been withdrawn since Applicants have submitted drawings.

3. Claim Objections

A. Claims 32-47 are objected to since the syntax of claims 32, 35, 37, 40 and 42 could be improved by amending the phrase "providing a host cell hosting," or "host cell hosts" with "transfecting a host cell with." It appears that the original claims were worded in this manner, but were amended in Amendment B, filed 6/6/02. If Applicants do not wish to amend the claims as suggested by the Examiner, an explanation would be appreciated. Similarly, the word "constituting" should be replaced with "comprising."

B. Claims 35, 36, 40 and 41 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. In absence of evidence to the contrary, all cells should comprise transcription factors. Therefore, it is not clear how these claims further limit the claims from which they depend.

4. Claim Rejections - 35 USC § 112, first paragraph – scope of enablement

A. The rejection of claims 22-41 under 35 USC 112, first paragraph, has been withdrawn in favor of the following rejection. The Examiner stated on page 3 of the Office Action dated 8/13/02 that Applicants were enabled for "functionally equivalent modified forms" of SEQ ID NO:1 and 2. However, upon further consideration, Applicants are not enabled for this scope and a new rejection is made below.

B. Claims 32-47 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for active fragments of SEQ ID NO:1 and 2 which have promoter activity, does not reasonably provide enablement for "functionally equivalent modified forms" of SEQ ID NO:1 or 2, or for those fragments, or modified forms which are at least 95% identical to SEQ ID NO:1 or 2 which do not have a recited functional limitation in the claim, as well as those which include other types of alterations than deletions, as well as for methods using only bases 4308-4315 of SEQ ID NO:2. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims.

In In re Wands, 8USPQ2d, 1400 (CAFC 1988) page 1404, the factors to be considered in determining whether a disclosure would require undue experimentation include (1) the quantity of experimentation necessary, (2) the amount of direction or guidance presented, (3) the presence or absence of working examples, (4) the nature of the invention, (5) the state of the prior art, (6) the relative skill of those in the art, (7) the predictability or unpredictability of the art, and (8) the breadth of the claims.

First, the breadth of the claims is excessive with regard to Applicants claiming the use of any fragment, or modified form of SEQ ID NO:1 or 2 which does not recite that the said fragment or form (variant) does not retain GABA (if this is the case) promoter activity. The breadth of the claims is also excessive regarding Applicants claiming all types of alterations other than deletion mutations. Applicants have provided no guidance or working examples of modified forms of SEQ ID NO:1 and 2 other than those which have specific regions deleted (Figure 5). Applicants have not shown that random bases throughout the promoter, other than the specified "blocks" can be deleted, or that other bases can be

substituted or added and still retain the desired function. Furthermore, the breadth is excessive with regard to claim 44 which recites methods using any promoter which only comprises bases 4308-4315 of SEQ ID NO:2. This fragment is only 8 bases in length out of a promoter sequence which is greater than 4000 bases.

Applicants define the term "functionally equivalent modified forms" at the top of page 5 of the specification as "nucleic acid molecules modified from their original sequence that can bind transcription factors." While it is clear that Applicants have produced "active fragments" of SEQ ID NO:1 and 2 (Figure 4) which have (GABA?) promoter activity as well as some variants of these promoters (Figures 4 and 5) having this activity, Applicants have not enabled the full scope of the claims. The claims include in scope any modified forms of SEQ ID NO:1 or 2, wherein the nucleic acid molecule is at least 95% identical to SEQ ID NO:1 and 2, active fragment, or modified form thereof **and which do not have to have promoter activity**. Furthermore, while Applicants are enabled for variants of SEQ ID NO:1 and 2 which are at least 95% identical to SEQ ID NO:1 and 2 which have promoter function and wherein these forms are produced by deletion of specific promoter residues, they are not enabled for all "modified forms" which comprise additions, or substitutions of these bases, nor are then enabled for any chemical modifications, or the use of non-naturally occurring bases. Use of a phrase such as "functionally equivalent modified variant" will overcome the part of this rejection concerned with "non-naturally occurring bases" and "chemical modifications" **as long as no new matter is added regarding this phrase**. The recitation of "wherein said fragment or variant has (GABA) promoter activity" would overcome the appropriate rejection.

Therefore, the breadth of the claims is excessive regarding Applicants claiming any fragment of modified form of SEQ ID NO:1 or 2 which does not have a functional limitation. Furthermore, Applicants have provided no guidance and working examples of alterations that can be made to SEQ ID NO:1 and 2 other than the specific blocks of deletions seen in Figure 5, nor have they demonstrated that a nucleic acid comprising only bases 4308-4315 of SEQ ID NO:2 would have the desired function. Finally, Applicants have not demonstrated that "modified forms" of SEQ ID NO:1 or 2 which have chemically altered, or non-naturally occurring bases would have the desired effect, nor is it predictable which of these changes can be made and still retain the desired function. Therefore, the Examiner concludes that undue experimentation would be required to practice the invention as claimed.

5. Claim Rejections - 35 USC § 112, first paragraph – written description

A. The rejection of claims 22-27 under 35 USC 112, first paragraph, has been withdrawn in favor of the following rejection. The Examiner stated on page 4 of the Office Action dated 8/13/02 that the specification adequately described "functionally equivalent modified forms" of SEQ ID NO:1 and 2. However, upon further consideration, adequate written description is lacking and a new rejection is made below.

B. Claims 32-47 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

These are genus claims. Nucleic acid molecules which are "functionally equivalent modified forms" of SEQ ID NO:1 or 2, or of nucleic acid molecules which are "at least 95% identical to SEQ ID NO:1 and 2" would have one or more nucleic acid substitutions, deletions, insertions and/or additions to said polynucleotides other than the deletions seen in Figure 5 of the specification. These alterations also include any chemically modified or non-naturally occurring bases of SEQ ID NO:1 or 2. In addition, Applicants have not described which polynucleotides comprising only bases 4308-4315 of SEQ ID NO:2 would have the desired function. Finally, none of these claims recite the desired function of any nucleic acid other than SEQ ID NO:1 and 2.

These are genus claims. These claims cover any sequence regardless of whether or not the sequence retains promoter function. Thus the scope of the claims includes numerous variants **which may not have promoter function**. Furthermore, the claims read on changes to the promoter sequence which include other alterations besides the deletion of the specific regions disclosed in Figure 5. These changes include the use of chemically modified bases or non-naturally occurring bases (encompassed by the phrase "modified forms"). The specification and claims do not provide any guidance as to what changes should be made to the bases of SEQ ID NO:1 and 2 other than the deletion of those bases of SEQ ID NO:1 or 2. Finally, Applicants have not provided adequate written description of all functional fragments of SEQ ID NO:2 which only must comprise bases 4308-4315 of SEQ ID NO:2. The general knowledge and level of skill in the art do not supplement the omitted description because specific, not general, guidance is what is needed. Since the disclosure fails to describe the common attributes or characteristics that identify members of the genus, and because the genus is highly variant, SEQ ID NO:1 and 2 alone are insufficient to describe the genus.

The specification provides a written description of only a small number of these nucleic acid constructs (Figures 4 and 5 which are based on SEQ ID NO:1 and 2). These include specific fragments and deletions of the promoters of the invention. No other species (additions, substitutions, chemical modifications) are described, or structurally contemplated, within the instant specification. Therefore, one skilled in the art cannot reasonably visualize or predict critical nucleic acid residues which would structurally characterize the genus of nucleic acids encoding the genus of promoters claimed, because it is unknown and not described what structurally constitutes any different nucleic acids encoding these promoters, or nucleic acids encoding promoters from any different species, which are further not described; thereby not meeting the written description requirement under 35 USC 112, first paragraph. Therefore, one of skill in the art would reasonable conclude that the disclosure fails to provide a representative number of species to describe the genus. Thus, Applicant was not in possession of the claimed genus at the time the invention was made.

6. Claim Rejections - 35 USC § 112, second paragraph

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 32-47 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

A. Claims 32-47 are confusing since it is not clear what the activity is of the "active fragments," "functionally equivalent modified forms" and sequences which are "at least 95% identical" to SEQ ID NO:1 and 2. It is suggested that the claims be amended to recite that these sequences have promoter activity.

B. Claims 32-47 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are: a final step in claims 32, 37 and 42 which demonstrates when the intended method has been performed. In claim 32, for example:

(d) wherein modulation of reporter gene expression indicates that the compound is a modulator of $GABA_B$ receptor 1 transcription.

C. Claims 35 and 40 recites the limitation "one transcription factor" into claims 32 and 37, respectively. There is insufficient antecedent basis for this limitation in the claim. It is not clear what role the transcription factor would play in the method of claims 32 and 37. In other words, there is no method step requiring the use of this factor in claims 32 or 37, or any method step explaining what effect the factor has on the identification of the screened compound. Claims 36 and 41 are also rejected since they depend from claims 35 and 40, respectively.

D. Claim 37 is confusing since it is not clear if both parts (1) and (2) comprise parts (i) and (ii), or if just part (2) comprises parts (i) and (ii). The claim would be clearer if it was amended to recite ", molecule, wherein said promoter element is selected from the group."

E. Claims 37-47 are confusing since at least claim 37, 42 and 44 recite "consisting essentially of." The metes and bounds of this phrase are not known, nor could any definition be found in the claims or specification. Claims 38-41, 43 and 45-47 are rejected since they depend from rejected base claims.

F. Claims 37-47 are confusing since at least claim 37, 42 and 44 recite "functionally equivalent modified forms." The metes and bounds of this phrase are not known, nor could any definition be found in the claims or specification. It is not known if this term encompasses, for example, only additions, deletions and/or substitutions to the nucleic acid molecules of SEQ ID NO:1 and 2, or, for example, other chemical modifications, or non-naturally occurring bases. The term "functionally equivalent variant" may be more clear, if there is adequate support for this term in the specification. Claims 38-41, 43 and 45-47 are rejected since they depend from rejected base claims.

G. Claims 37-47 are confusing since at least claim 37, 42 and 44 recite "active fragment." The metes and bounds of this phrase are not known, nor could any definition be found in the claims or specification. Claims 38-41, 43 and 45-47 are rejected since they depend from rejected base claims.

H. Claims 42 and 44 are confusing since it is not clear if the "functionally equivalent modified form" has to be at least 95% identical to either SEQ ID NO:1 or 2, respectively, or of the methods are using a functionally equivalent modified form of any promoter at least 95% identical to SEQ ID NO:1 or 2, respectively – implying that the modified form could have any number of changes to SEQ ID NO:1 and 2. Claims 43 and 45-47 are rejected since they depend from claims 42 or 44.

I. Claims 43 and 46 are confusing since it is not understood what is meant by the term "not operably linked." It is not clear what the purpose of this limitation is. It is also not clear if the repressor region is still involved in the method of claims 42 or 44, or if the region is absent.

7. Conclusion

A. No claim is allowable.

Advisory information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert Landsman whose telephone number is (703) 306-3407. The examiner can normally be reached on Monday - Friday from 8:00 AM to 5:00 PM (Eastern time) and alternate Fridays from 8:00 AM to 5:00 PM (Eastern time).

If attempts to reach the examiner by telephone are unsuccessful, the Examiner's supervisor, Gary Kunz, can be reached on (703) 308-4623.

Official papers filed by fax should be directed to (703) 308-4242. Fax draft or informal communications with the examiner should be directed to (703) 308-0294.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0196.

Robert Landsman, Ph.D.
Patent Examiner
Group 1600
May 20, 2003

ROBERT LANDSMAN
PATENT EXAMINER